

TABLE 5. SPECIES IMPACT SUMMARY

Species Name	Status ¹			Potential Habitat in Project Site	Activity That May Cause Impact	Avoidance Measures (i.e. Project Design to avoid impacts)	Mitigation (if required)
	Federal	State	CNPS				
WILDLIFE SPECIES							
Fish							
<i>Hypomesus transpacificus</i> delta smelt	T	T	NA	<ul style="list-style-type: none">• 290 linear feet along Carquinez Strait	<ul style="list-style-type: none">• Equipment use within the water column that would result in a temporary increase in turbidity• Species removal and handling• Dewatering	<ul style="list-style-type: none">• Placement of cofferdams at lowest tide possible• Seining remaining waters in sections to relocate aquatic species• Maintain an operational slough throughout the project	None. Avoidance measures reduce impact to less than significant.
<i>Oncorhynchus mykiss</i> steelhead - Central Valley California ESU	T	none	NA	<ul style="list-style-type: none">• Adults = Carquinez Strait• Smolts =<ul style="list-style-type: none">• Carquinez Strait• Peyton Slough• Peyton Slough No. 1• Side channels	<ul style="list-style-type: none">• Equipment use within the water column that would result in a temporary increase in turbidity, including sloughing of AOC material• Species removal and handling• Dewatering• Operation of tide gate; trapping species behind levee	<ul style="list-style-type: none">• Placement of cofferdams at lowest tide possible• Seining remaining waters in sections to relocate aquatic species• Maintain an operational slough throughout the project	<ul style="list-style-type: none">• Creation of side channels to drain marsh units (to avoid stranding fry/smolts) and create shallow water habitat• Allow two-way flow through tide gate to avoid entrapment of individuals behind levee• Increase slough sinuosity• Reconnect small channels and construct new small channels in wetlands both north and south of the levee• Increase hydraulic capacity of the slough by 20%• Install remotely controlled actuators for tide gates improve slough and wetland management• Provide funding for CCMVCD to remove channel obstructions immediately downstream of the railroad box culvert
<i>Oncorhynchus tshawytscha</i> Chinook salmon <ul style="list-style-type: none">• Sacramento River winter-run• Central Valley spring-run• Central Valley fall/late fall-run	E T Ca	E T Ca	NA	<ul style="list-style-type: none">• Adults = Carquinez Strait• Smolts =<ul style="list-style-type: none">• Carquinez Strait;• Peyton Slough• Peyton Slough No. 1• Ditches/Side channels	<ul style="list-style-type: none">• Equipment use within the water column that would result in a temporary increase in turbidity, including sloughing of AOC material• Species removal and handling• Dewatering• Operation of tide gate; trapping species behind levee	<ul style="list-style-type: none">• Placement of cofferdams at lowest tide possible• Seining remaining waters in sections to relocate aquatic species• Maintain an operational slough throughout the project• Most of the work window avoids the out-migrating period	<ul style="list-style-type: none">• Creation of side channels to drain marsh units (to avoid stranding fry/smolts) and create shallow water habitat• Allow two-way flow through tide gate to avoid entrapment of individuals behind levee• Increase slough sinuosity• Reconnect small channels and construct new small channels in wetlands both north and south of the levee• Increase hydraulic capacity of the slough by 20%• Install remotely controlled actuators for tide gates improve slough and wetland management• Provide funding for CCMVCD to remove channel obstructions immediately downstream of the railroad box culvert

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<i>Pogonichthys macrolepidotus</i> Sacramento splittail	T	SC	NA	<ul style="list-style-type: none">• Carquinez Strait• Peyton Slough• Peyton Slough No. 1• Side channels	<ul style="list-style-type: none">• Equipment use within the water column that would result in a temporary increase in turbidity, including sloughing of AOC material• Species removal and handling• Dewatering• Operation of tide gate; trapping species behind levee	<ul style="list-style-type: none">• Placement of cofferdams at lowest tide possible• Seining remaining waters in sections to relocate aquatic species• Maintain an operational slough throughout the project	<ul style="list-style-type: none">• Creation of side channels to drain marsh units and create shallow water habitat;• Allow two-way flow through tide gate to avoid entrapment of individuals behind levee• Increase slough sinuosity• Reconnect small channels and construct new small channels, in wetlands both north and south of the levee• Increase hydraulic capacity of the slough by 20%• Install remotely controlled actuators for tide gates improve slough and wetland management• Provide funding for CCMVCD to remove channel obstructions immediately downstream of the railroad box culvert
Amphibians							
<i>Rana aurora draytonii</i> California red-legged frog	T	SC Pr	NA	<ul style="list-style-type: none">• Rhodia Marsh• Shore Terminals Marsh• Peyton Slough, south of levee	<ul style="list-style-type: none">• Dewatering and excavation	<ul style="list-style-type: none">• Placement of cofferdams at lowest tide possible• Pre-construction survey and seining remaining waters in sections to relocate aquatic species	<ul style="list-style-type: none">• Note: once tide gates operational area will be too saline for frog eggs and larva.• None. Avoidance measures reduce impact to less than significant.
Reptiles							
<i>Clemmys marmorata marmorata</i> northwestern pond turtle <i>Clemmys marmorata pallida</i> Southwestern pond turtle	SC	SC Pr	NA	<ul style="list-style-type: none">• Peyton Slough south of levee• Rhodia Marsh	<ul style="list-style-type: none">• Equipment use within the water column that would result in a temporary increase in turbidity• Water quality impact from sloughing of AOC material during AOC removal activities• Species removal and handling• Dewatering	<ul style="list-style-type: none">• Placement of cofferdams at lowest tide possible• Seining remaining waters in sections to relocate aquatic species• Maintain an operational slough throughout the project	None. Avoidance measures reduce impact to less than significant.
Birds							
<i>Laterallus jamaicensis coturniculus</i> black rail	MNBMC	T FPr	NA	<ul style="list-style-type: none">• Peyton Marsh (north of levee)	<ul style="list-style-type: none">• Excavation of new alignment• AOC Removal (north of tide gate)• Excavation of side channels north of levee	<ul style="list-style-type: none">• Remove habitat inside construction zone during the non-breeding season and prior to construction• Slough was realigned to avoid impacts to pickleweed	<ul style="list-style-type: none">• Re-establish high marsh, predominantly pickleweed• Conduct breeding season survey to identify potential locations of rail nests
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	SC	SC	NA	<ul style="list-style-type: none">• Peyton Slough (north and south of levee)• North Peyton Marsh• Rhodia Marsh	<ul style="list-style-type: none">• AOC Removal• Construction of the new alignment	<ul style="list-style-type: none">• None identified.	<ul style="list-style-type: none">• Preconstruction Surveys for nesting birds. If nest but no eggs/fledglings, then remove nest. If eggs of fledgling, then clearly mark and avoid until young have fledged and have left the nest.
<i>Melospiza melodia maxillaris</i> Suisun song sparrow	SC	SC	NA	<ul style="list-style-type: none">• Peyton Slough (north and south of levee)• North Peyton Marsh	<ul style="list-style-type: none">• Hand removal of vegetation• AOC Removal• Construction of the new alignment	<ul style="list-style-type: none">• None identified.	<ul style="list-style-type: none">• Preconstruction Surveys for nesting birds. If nest but no eggs/fledglings, then remove nest. If eggs of fledgling, then clearly mark

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				<ul style="list-style-type: none">• Rhodia Marsh			and avoid until young have fledged and have left the nest.
Mammals							
<i>Reithrodontomys raviventris</i> salt marsh harvest mouse	E	E F Pr	NA	<ul style="list-style-type: none">• High quality habitat (0.6 acres);• Low quality habitat (approx. 7.8 acres)	<ul style="list-style-type: none">• Excavation of new alignment• AOC Removal (north of tide gate)• Excavation of side channels north of levee	<ul style="list-style-type: none">• Slough was realigned to avoid impacts to pickleweed• Hand-removal of vegetation on new alignment corridor or trap-out of mice and mechanical removal of habitat	<ul style="list-style-type: none">• Establish 17.55 acres of salt marsh harvest mouse habitat, consisting of pickleweed and other obligate, native wetland species <i>Note:</i> final habitat loss and mitigation requirements will be calculated from as-built construction plans.
PLANT SPECIES							
<i>Aster lentus</i> Suisun Marsh aster	SC	None	1B	<ul style="list-style-type: none">• North Peyton Marsh, particularly along Peyton Slough and Peyton Slough No. 1	<ul style="list-style-type: none">• Excavation of new alignment• AOC Removal (north of tide gate)• Excavation of side channels north of levee	Survey will be conducted between Aug – Nov.	
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	SC	None	1B	<ul style="list-style-type: none">• 2 plants were identified growing on the railroad grade about 50 yards from Peyton Slough	<ul style="list-style-type: none">• None. Plants identified are outside the project construction impact area.	<ul style="list-style-type: none">• Avoid disturbing plants and protect with a construction fence during construction activity	<ul style="list-style-type: none">• Harvest a portion of the seed pods after the flowering season in years 2002 and 2003 and propagate species• Establish propagated species in preferable locations once construction is complete.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	SC	R	1B	<ul style="list-style-type: none">• Botanical survey found species along the banks at the mouth of Peyton Slough and Peyton Slough No. 1;	<ul style="list-style-type: none">• Dredging of the mouth of the new alignment• Capping of Peyton Slough	<ul style="list-style-type: none">• Excavate mats of potentially impacted plants along with dominant vegetation and place outside the project area along shoreline of Carquinez Strait at the mouth of a slough to minimize loss	<ul style="list-style-type: none">• Take plugs of the relocated mats and establish species at the mouth of the new alignment when construction is complete
<i>Limosella subulata</i> Delta mudwort	None	None	2	Riparian scrub, freshwater marsh, brackish marsh; usually on mud banks of the Delta on marshy or scrubby riparian association, often with <i>Lilaeopsis masonii</i> ; probably the rarest of the suite of Delta rare plants; 0-3 meters; May-Aug.	<ul style="list-style-type: none">• Excavation of new alignment• Capping of Peyton Slough	<ul style="list-style-type: none">• No individuals were identified during survey, may exist, will check again later in season.	<ul style="list-style-type: none">• If present, it will be moved simultaneously with the Mason's lilaeopsis.

Notes:

^aFederal Status Codes:
E=Endangered. Species in danger of extinction throughout all or a significant portion of its range.
T=Threatened. Species likely to become endangered within the foreseeable future.
PE=Proposed for listing as endangered.
PT=Proposed for listing as threatened.
PD=Proposed for delisting
C=Candidate for listing.
SC=Special concern species.
MNBMC = Migratory Non-game Birds of Concern

^bCalifornia Status Codes:

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E=Endangered. Species whose continued existence in California is in jeopardy.
T=Threatened. Species likely to become endangered within the foreseeable future.
R=Rare. Plant species, although not presently threatened with extinction, that may become endangered in the foreseeable future.
SC=California Department of Fish and Game species of special concern.
FPr=Fully protected species defined in the State of California under Sections 3511 and 4700 of the Fish and Game Code.
Pr = Protected species defined in the State of California under Sections 3511 and 4700 of the Fish and Game Code

°California Native Plant Society Status Codes:
1A=Plants presumed extinct in California.
1B=Plants that are rare, threatened, or endangered in California and elsewhere.
2=Plants that are rare, threatened, or endangered in California, but more common elsewhere.
3=Plants about which more information is needed.
4=Plants of limited distribution